Amendments to the Specification:

Page 19, amend paragraph [0032] as follows.

[0032]

Next, explanation will be made in details about the circulating flow of the liquid coolant in the liquid crystal projector, according to the present invention, including the respective liquid crystal panels 101 in a part thereof, the detailed structures of which are shown in the above, by referring to Fig. 2. However, herein the explanation was made that the liquid crystal panels 101(R), 101(G) and 101(B) for R, G and B are connected in series within the liquid cooling cycle shown in the figures, in which the liquid coolant is driven with the function of the pump [[29]] 129, to be circulated through the radiator 130 for building up the heat radiation portion thereof. But, according to the present invention, it should not be restricted only to that, and those liquid crystal panels 101(R), 101(G) and 101(B) may be connected in parallel with, within the liquid cooling cycle mentioned above. Then, in this figure, the explanation will be made only by taking out one (1) of those three (3) kinds thereof, i.e., to be a single liquid crystal panel 101.

Page 21, amend paragraph [0035] as follows.

[0035]

In this manner, with such structures of the flow channels mentioned above, it is possible to prevent the liquid coolant from generating eddy and/or drifting within an area of the liquid crystal panel surface, while achieving an increase of the velocity of coolant flowing on the surface of the liquid crystal panel (i.e., the liquid crystal panel area) and equalization (or, making uniform) thereof. Also, for that reason, there is no chance of generating difference in density of the coolant flowing within an inside thereof, or generating difference in the cooling capacity, and therefore, no distribution is created in temperature on the surface of the liquid crystal panel, nor no

difference in the refractive index because of that. For the reason, no disturbance is generated on the picture obtained, such as the fluctuation, etc., and thereby enabling an improvement in the quality of the picture. In addition thereto, with such the flow channel structures as mentioned above, since the so-called liquid cooling cycle can be established, wherein the heat generated is discharged into an outside through the radiator 130 making up the heat radiation portion, while driving the liquid coolant by means of the pump [[12]] 129, it is needless to say that the liquid crystal panel can be cooled down at higher cooling efficiency.

Page 25, amend paragraph [0042] as follows.

[0042]

Next, Figs. 5(a) and 5(b) attached herewith show the cross-section views of the liquid crystal panel 101, according to other modification, further. With the liquid crystal panel 101 according to the other variation, as is apparent from the figures, within the flow paths being defined between the opposite substrate 1 and the protection glass plate 4 and also between the TFT substrate 2 and the protection glass plate 5, there are inserted separation plates 60 and [[61]] 70, respectively, each being a flat and transparent plate-like member having a uniform thickness; thereby defining the flow channels 6a and 6b, and 7a and 7b, of high resistance, within the liquid crystal panel area, and as the same time, the buffer flow channels 10 and 17 are defined, respectively, within the tip and bottom edge portions of the case 14 to be unified therewith. However, with such the structures, by changing the thickness of the separation plates 60 and [[61]] 70 mentioned above, it is possible to vary or adjust the flow resistance of the flow channels 6a and 6b, and 7a and 7b, of high resistance, appropriately, and also possible to define the high-resistance flow channels, easily. Also, similar to that mentioned above, it is possible to reduce the number of parts building up the liquid crystal panels, thereby achieving a low cost thereof, in particular, through defining the buffer flow channels within the case 14, and also reducing the outer sizes thereof, much more.

Page 26, amend paragraph [0045] as follows.

[0045]

As is apparent from those figures, within the liquid crystal panel according to this other embodiment, corresponding to the above-mentioned liquid crystal panel area, i.e., an effective pixel area of the liquid crystal panel, there are also defined the high-resistance flow channels 6 and 7, each having a small thickness "d", between the opposite substrate 1 and the protection glass plate 4, and between the TFT substrate 2 and the protection glass plate 5, building up the liquid crystal panel, respectively, and in the places of the buffer potions mentioned above, in particular, as is apparent from Fig. 6(a), auxiliary flow channels [[70]] 61 and 71 of low resistance, having thickness larger than the thickness "d" of the high-resistance flow channel, are defined around the periphery of the high-resistance flow channels 6 and 7 mentioned above. Also, with the liquid crystal panel according to this other embodiment, also apparent from Fig. 6(a), the auxiliary flow channels [[70]] 61 or 71 is defined to be wide in width below (i.e., the upstream side of the liquid coolant), and thereafter, to be narrow in width, gradually, as it moves upwards in the figure (i.e., the downstream side of the liquid coolant).

Page 27, amend paragraph [0047] as follows.

[0047]

Further, Fig. 7 attached herewith shows a variation of the liquid crystal panel according to the other embodiment explained in the above, by a plane cross-section view thereof. However, in this variation, as is apparent from the figure, the auxiliary flow channel 70 or 71 of low resistance shown in Figs. 6(a) to 6(c) is modified into an auxiliary flow channel [[70]] 61 (or 71), which is rectangular in an outer shape thereof, surrounding the periphery of the rectangular high-resistance flow channel 6 (or 7), which is defined corresponding to the effective pixel region (i.e., the liquid crystal panel area) of the liquid crystal panel, with a uniform width. However, with this variation, it is also possible to bring the coolant flowing within the high-resistance flow channel 6, uniformly, from the periphery thereof, in the similar manner to the above, and also since it needs no such case mentioned above, it is possible achieve an effect of reducing the number of the constituent parts thereof, and further that of

reducing the outer sizes thereof, much more.

Page 30, amend paragraph [0052] as follows.

[0052]

Next, explanation will be made in details about the circulating flow of the liquid coolant in the liquid crystal projector, according to the second embodiment of the present invention, including the respective liquid crystal panels 101 in a part thereof, the detailed structures of which are shown in the above, by referring to Fig. 9. However, herein the explanation was made that the liquid crystal panels 101(R), 101(G) and 101(B) for R, G and B are connected in series within the liquid cooling cycle shown in the figures, in which the liquid coolant is driven with the function of the pump [[29]] 129, to be circulated through the radiator 130 for building up the heat radiation portion thereof. But, according to the present invention, it should not be restricted only to that, and those liquid crystal panels 101(R), 101(G) and 101(B) may be connected in parallel with, within the liquid cooling cycle mentioned above. Then, in this figure, the explanation will be made only by taking out one (1) of those three (3) kinds thereof, i.e., to be a single liquid crystal panel 101.

Page 30, amend paragraph [0053] as follows.

[0053]

Namely, receiving heat within the liquid crystal panel 101, heated upon receipt of the lights from the light irradiation source 112, being strong in the intensity thereof, the liquid coolant increased in temperature thereof is discharged from the buffer flow channels 10 and 11, to be driven by the pump 129, and it passes through the radiator 130. In that instance, the heat is discharged into an outside, thereby to be cooled down, and then the liquid coolant flows into the buffer flow channels 17 and 18, again, which are attached on top and bottom edge portions of the case 14, being the frame body of the liquid crystal panel 101 mentioned above. Thereafter, the liquid coolant within the buffer flow channels 17 and 18, after passing through the flat flow channels 15 and 16 having the thickness "d", which are defined in the upper

edge portion of the case 14, then thereafter through the flat flow channels 6 and 7 having the thickness "D" of the liquid crystal area, and further passing through the flat flow channels 10 and 11 having the thickness "d", which are defined in the lower edge portion of the case 14, turns back to the buffer flow channels 10 and 11 mentioned above, again. In that instance, as was mentioned above, on both sides (up and down) of the flat flow channels 6 and 7 of the liquid crystal panel area are provided so-called, the high-resistance flow channels, i.e., the flat flow channels 15 and 16 (upper) and [[10 and 11]] 8 and 9 (lower), having the thickness "d" (D>d).

Page 31, amend paragraph [0054] as follows.

[0054]

Thus, with such structures of the flow channels, the liquid coolant flowing therein from the induction tube 20 for the liquid coolant, for example, expands into the width direction (i.e., in the horizontal direction in Fig. 8(b)), to be greatly reduced in the flow velocity thereof, because of provision of the flat flow channel 16 having the thickness "d" for building up the high-resistance flow channel. As a result thereof, the pressure comes to be equal or uniform within the buffer flow chamber 18. Further, since the buffer flow channel 11 is also provided in the downstream side of the flat flow channels 7 the thickness "D", covering the liquid crystal panel area, continuing with the flat flow channel 9 of high resistance, therefore the pressure within the buffer flow channel 11 comes to be equal or uniform even if sucking the coolant from a piece of the delivery tube 13, due to largeness of the flow resistance within the flow channel 9. When it is so, since a flow rate (i.e., the flow velocity) of the liquid coolant, flowing within the flat flow channels [[16 and 17]] 15 and 16 of high resistance and the flat flow channel 7 having the thickness "D", is proportional to the differences in the pressure and the cross-section area between the upper buffer flow channel and the lower buffer flow channel, therefore the flow velocity within the flow channel 7 comes to be constant if the thickness "D" of the flow channel 7 and the thickness "d" of the flow channels 16 and 9 are equal or uniform in the width direction thereof. In the similar manner, the liquid coolant flowing therein from the induction tube 19 for liquid coolant flows at an equal or uniform velocity in the flat flow channel 6 having the thickness "D".

Page 35, amend paragraph [0061] as follows.

[0061]

Next, Fig. 10(a) attached herewith shows a modification of the liquid crystal panel 101 shown in Figs. 8(a) and 8(b), by the cross-section view thereof, and also Fig. 10(b) shows the A-A cross-section view in Fig. 10(a) mentioned above. With the liquid crystal panel 101 according to this modification, in particular, the flow channels 8 and 9 (lower) and 15 and 16 (upper), which are defined in the top and bottom edge portions of the case 14 for building the frame surrounding the various substrates, are shaped, not into the slit-like as shown in Figs. 1(a) and 1(b) mentioned above, but into a plural number of circular through-holes [[32]] 30 - 33. Further, with the structures of the liquid crystal panel 101 according to such the modification, in addition to the effects similar to those obtainable from the liquid crystal panel according to the above-mentioned embodiment, in particular, since the through-holes [[32]] 30 - 33 are formed in the top and bottom edge portions of the case 14, in the places of the slit-like flow channels mentioned above, there can be obtained an effect that the manufacturing thereof comes to be easy, and also it is advantageous, in particular, when defining the flow channels to be in further high resistance within the flow channels 15 and 16 (upper) and 10 and 11 (lower) for forming the throttles for the liquid coolant.

Page 36, amend paragraph [0062] as follows.

[0062]

Next, Fig. 11 attached herewith shows the cross-section view of the liquid crystal panel 101, according to other modification, further. With the liquid crystal panel 101 according to the other variation, as is apparent from the figure, the slit-like flow channels 8 and 9 (lower) and 15 and 16 (upper), which are defined in the top and bottom edge portions of the case 14 for building the frame surrounding the various substrates, are defined to be equal to the thickness "D" of the flow channels 6 and 7 covering the liquid crystal panel area mentioned above, in advance, and thereafter, resistance plates [[30 and 31]] 50 and 51 (upper) and [[32 and 33]] 52 and

53 (lower), each having a predetermined thickness, are attached on one side of the wall surfaces of those slit-like flow channels, thereby making up into the high-resistance flow channels having the thickness "d". However, with such the structures, for example, if determining the flat thickness of the resistance plates [[30, 31, 32 or 33]] 50, 51, 52 or 53 to be fixed within the slit-like flow channels, which are defined in the top and bottom edge portions of the case 14 manufactured in advance, at a desirable value corresponding to the thickness "D" of the flow channels 6 and 7 covering the liquid crystal panel area, it is possible to build up the suitable high-resistance flow channels, easily, while obtaining the functions/effects mentioned above. Also, changing the thicknesses of the resistance plates [[30, 31, 32 or 33]] 50, 51, 52 or 53, depending on the respective one of the flow channels 6 and 7 covering the liquid crystal panel area, it is also possible to change the flow velocity of the coolant within those flow channels 6 and 7.

Page 38, amend paragraph [0066] as follows.

[0066]

Finally, Fig. 14 attached herewith also shows the liquid crystal panel 101, according to further other embodiment of the present invention, by the cross-section view thereof. However, as is apparent from the figure, with the liquid crystal panel 101 according to this further other embodiment, in the top edge portion of the case 14 forming the frame is defined a flow channel 46 having the thickness "D" similar to the flow channel 6, but being wound in the "U" shape, and it is connected to the other flow channel 7, on a while, in the bottom edge portion of the case 14 are defined the high-resistance flow channels 44 and 45 having the thickness "d", to be connected with the box-like members 42 and [[42]] 43 for defining the buffer flow channels, respectively. Further, reference numerals [[42 and 43]] 40 and 41 depict the introduction/delivery tubes for the liquid coolant.